



# STIC Search Report

## EIC 3700

STIC Database Tracking Number: 178911

**TO: Laura C Hill**  
**Location: RND 6b76**  
**Art Unit: 3761**  
**Monday, March 27, 2006**

**Case Serial Number: 10/775666**

**From: Ethel Leslie**  
**Location: EIC 3700**  
**RND 8A34**  
**Phone: 571-272-5992**

**Ethel.leslie@uspto.gov**

### Search Notes

Laura,

I hope you received the search results for the surgical drain with sensors I sent to you via email. If you didn't get them, let me know and I'll be happy to get them to you.

Attached is a copy of your search request as well as a STIC Feedback Form. If you have a moment, please fill out the Feedback Form and return it to us.

Thank you!  
Ethel Leslie

178911

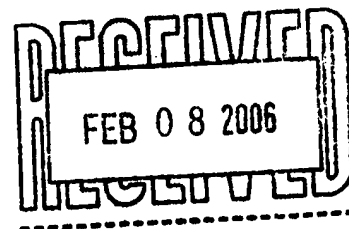
**Solomon, Terrance**

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**From:** Hill, Laura C.  
**Sent:** Tuesday, February 07, 2006 4:15 PM  
**To:** STIC-EIC3700  
**Subject:** Database Search Request, Serial Number: 10/775666

Requester:  
LAURA HILL (P/3761)  
Art Unit:  
GROUP ART UNIT 3761  
Employee Number:  
80706  
Office Location:  
RND 06B76  
Phone Number:  
(571)272-7137  
Mailbox Number:

Case serial number:  
10/775666  
Class / Subclass(es):  
600/301-302; 604/541  
Earliest Priority Filing Date:  
02/07/03  
Format preferred for results:  
E-mail  
Search Topic Information:  
-implanted surgical drain with multiple sensors attached to drain  
-system for postoperative tissue or organ monitoring having processor to determine color  
value based on spectral energy/light/radiation  
Special Instructions and Other Comments:  
8:30-5:30pm (Monday-Friday; off every other Friday)



## EIC SEARCH RESULTS

**Serial No. 10/775,666 – Surgical drain with sensors for monitoring internal tissue condition**

ASRC Searcher: Ethel Leslie

Date: March 23 & 27, 2006

### Foreign & International Patent Search #1

#### Search Strategy

Set	Items	Description
S1	129939	SPECTRAL? OR SPECTRUM?
S2	2470828	WAVELENGTH? OR WAVEFORM? OR WAVE() (LENGTH? OR FORM? ?) OR - ENERGY OR ENERGIES OR LIGHT? ? OR RADIAT?
S3	757213	COLOR? OR COLOUR? OR CHROMATIC?
S4	3624462	SENSOR? ? OR SENSE? ? OR SENSING? OR DETECT? OR ELECTRODE? ? OR MICROELECTRODE? ? OR PROBE OR PROBES
S5	1602455	MULTIPL? OR PLURAL?
S6	1406892	DRAIN? OR TUBE? ? OR TUBING? OR TUBUL? OR CATHETER? OR CAN- NULA? OR CONDUIT? ?
S7	264050	ORGAN? ? OR TISSUE? ? OR (BODY OR BODILY) (2N) FLUID? ?
S8	585674	BLOOD OR LIVER OR HEPATIC OR KIDNEY OR RENAL OR HEART OR C- ARDIAC OR LUNG OR LUNGS OR PULMONARY OR WOUND? ? OR BLADDER OR STOMACH OR IN() (VIVO OR SITU)
S9	481226	IC=(A61B? OR A61D? OR A61F? OR A61M?)
S10	27154	S1(5N) S2
S11	87282	S4(5N) S5
S12	0	S10 AND S11 AND S3 AND S6 AND S7:S8
S13	219	S2 AND S3 AND S4 AND S6 AND S7:S8
S14	51	S13 AND S9
S15	48	S2 (S) S3 (S) S4 (S) S6 (S) S7:S8
S16	13	S15 AND S9
S17	38	S14 NOT S16
S18	269955	S2:S3(5N) S4
S19	1487	S18 AND S6 AND S7:S8
S20	789	S19 AND S9
S21	520	S18(S) S6(S) S7:S8
S22	290	S21 AND S9
S23	241583	S2(5N) S4
S24	1395	S23 AND S6 AND S7:S8
S25	768	S24 AND S9
S26	281	(S23(S) S6(S) S7:S8) AND S9

File 347:JAPIO Nov 1976-2005/Nov(Updated 060302)

(c) 2006 JPO & JAPIO

File 350:Derwent WPIX 1963-2006/UD,UM &UP=200619

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## Search Results

16/5/4 (Item 4 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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015933640

WPI Acc No: 2004-091481/200409

Related WPI Acc No: 2004-108893; 2004-191063; 2004-795801

XRAM Acc No: C04-037267

SRPX Acc No: N04-073246

Characterizing the condition of a region of a tissue sample, useful in diagnosing a disease, by determining if a region lies outside a zone of interest and/or if optical data obtained are affected by an obstruction

Patent Assignee: MEDISPECTRA INC (MEDI-N)

Inventor: ABELE C C; BANKS P S; CLUNE T R; COSTA P J; DRAAYER B F; FLANAGAN J A; FLEWELLING R F; GRIFFIN C E; JIANG C; MEESE T M; MORRELL R M; SAAGER R B; SCHOMACKER K T; SCHOTT J; SUM S T; TWIETMEYER K; ZELENCHUK A; TWIETMEYER K M

Number of Countries: 106 Number of Patents: 012

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200405895	A1	20040115	WO 2003US21347	A	20030708	200409 B
US 20040010375	A1	20040115	US 2002394696	P	20020709	200416
			US 2002243535	A	20020913	
			US 2002295794	A	20021115	
			US 2003418415	A	20030418	
AU 2003259095	A1	20040123	AU 2003259095	A	20030708	200459
US 20040206882	A1	20041021	US 2003419181	A	20030418	200470
US 20040206913	A1	20041021	US 2003418668	A	20030418	200470
US 20040206914	A1	20041021	US 2003418973	A	20030418	200470
US 20040207625	A1	20041021	US 2003418902	A	20030418	200470
US 20040208385	A1	20041021	US 2003418974	A	20030418	200470
US 20040208390	A1	20041021	US 2003418975	A	20030418	200470
US 20040209237	A1	20041021	US 2003418922	A	20030418	200470
AU 2003259095	A2	20040123	AU 2003259095	A	20030708	200517
EP 1532431	A1	20050525	EP 2003763350	A	20030708	200535
			WO 2003US21347	A	20030708	

Abstract (Basic): WO 200405895 A1

NOVELTY - Characterizing the condition of a region of a tissue sample comprises determining whether a region of a tissue sample lies outside a zone of interest and/or whether optical data obtained from the region are affected by an obstruction.

DETAILED DESCRIPTION - Characterizing the condition of a region of a tissue sample comprises:

(a) determining at least one of:

(i) whether a region of a tissue sample lies outside a zone of interest; and

(ii) whether optical data obtained from the region are affected by an obstruction;

(b) processing a set of optical data obtained from the region to determine one or more tissue-class probabilities; and

(c) characterizing a condition of the region based on results of the determining step and the processing step.

The method comprises:

- (a) processing spectral data obtained from a region of tissue to determine, for each member of predefined tissue classes, a probability that the region comprises tissue within the member;
- (b) evaluating a classification metric using spectral data obtained from the region;
- (c) if the classification metric is satisfied, characterizing a condition of the region according to the classification metric; and
- (d) if the classification metric is not satisfied, characterizing a condition of the region according to the probabilities.

INDEPENDENT CLAIMS are also included for:

- (1) an apparatus, for characterizing the condition of one or more regions of a tissue sample, comprising:
  - (i) an optical detection device adapted to obtain spectral data from regions of a tissue sample;
  - (ii) a memory that stores code defining a set of instructions;
  - (iii) a processor that executes the instructions to identify spectral data obtained from substantially unobstructed members of the regions, where the members are within a zone of interest, determine tissue-class probabilities using the spectral data and determine a condition of one or more of the regions using the tissue-class probabilities;
- (2) determining the condition of one or more regions of a tissue sample;
- (3) determining a tissue-class probability for a region of tissue;
- (4) using a spectral mask to process spectral data;
- (5) identifying a region of healthy tissue;
- (6) identifying a region of necrotic tissue;
- (7) using an image mask to process optical data;
- (8) displaying diagnostic data;
- (9) creating an overlay for displaying diagnostic data;
- (10) calibrating spectral data obtained from a tissue sample;
- (11) correcting spectral data from a tissue sample for stray light internal to an optical instrument;
- (12) focusing an optical instrument on a tissue sample; and
- (13) enhancing an image of a tissue sample.

USE - The method is useful in characterizing the condition of a region of a tissue sample. The method is useful in diagnosing a disease.

pp; 351 DwgNo 0/117

Title Terms: CHARACTERISTIC; CONDITION; REGION; TISSUE; SAMPLE; USEFUL; DIAGNOSE; DISEASE; DETERMINE; REGION; LIE; ZONE; INTEREST; OPTICAL; DATA; OBTAIN; AFFECT; OBSTRUCT

Derwent Class: B04; D16; P31; P81; S03; S05

International Patent Class (Main): C12Q-001/00; G01N-021/00; G01N-021/64; G02B-007/04; G06F-019/00; G06K-009/00

International Patent Class (Additional): A61B-005/00 ; C12Q-001/02; G02B-027/40; G06K-009/40

File Segment: CPI; EPI; EngPI

16/5/6 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015671106 \*\*Image available\*\*

WPI Acc No: 2003-733293/200370

Related WPI Acc No: 2005-650952

XRAM Acc No: C03-202259

XRPX Acc No: N03-586225

**Drug delivery system used for delivering effective amount of drug comprises delivery pump having chamber for housing drug, delivery conduit connected to pump, sensor, and control unit in communication with sensor and pump**

Patent Assignee: CODMAN & SHURTLEFF INC (CODM-N); DEXTRADEUR A J (DEXT-I); KONIECZYNSKI D D (KONI-I); ROHR W L (ROHR-I)

Inventor: DEXTRADEUR A J; KONIECZYNSKI D D; ROHR W L

Number of Countries: 035 Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 1342482	A1	20030910	EP 2003251317	A	20030305	200370 B
CA 2420746	A1	20030906	CA 2420746	A	20030304	200370
US 20030171711	A1	20030911	US 200292955	A	20020306	200370
JP 2004000496	A	20040108	JP 200358907	A	20030305	200405
AU 2003200923	A1	20031002	AU 2003200923	A	20030304	200428
EP 1342482	B1	20051116	EP 2003251317	A	20030305	200579
			EP 200576066	A	20050506	
DE 60302264	E	20051222	DE 302264	A	20030305	200603
			EP 2003251317	A	20030305	

Abstract (Basic): EP 1342482 A1

NOVELTY - Drug delivery system (10) comprises a delivery pump (12) having a chamber housing at least one drug, a delivery conduit (14) connected to the pump and adapted to extend into a tissue site, a sensor producing a sensor output signal representative of a sensed biochemical parameter, and a control unit in communication with the sensor and pump.

DETAILED DESCRIPTION - Drug delivery system comprises a delivery pump having a chamber housing at least one drug, a delivery conduit connected to the pump and adapted to extend into a tissue site, a sensor producing a sensor output signal representative of a sensed biochemical parameter, and a control unit in communication with the sensor and pump. The control unit receives the sensor output signal and communicates a delivery signal to the pump to deliver the drug at a rate and for a duration to achieve a desired biochemical parameter in a predetermined range.

USE - Used for delivering an effective amount of drug to a tissue site, and assess primary biochemical parameters and/or events.

ADVANTAGE - The system is capable of directly measuring a primary biochemical parameter that underlies a particular disorder, and responds rapidly to the detected biochemical parameter with appropriate drug treatment.

DESCRIPTION OF DRAWING(S) - The drawing shows a closed loop drug delivery system.

Drug delivery system (10)

Delivery pump (12)

Delivery conduit (14)

Distal delivery end (15)

Pore regions (14a)

Controller unit (20)

pp; 15 DwgNo 1/3

Title Terms: DRUG; DELIVER; SYSTEM; DELIVER; EFFECT; AMOUNT; DRUG; COMPRISE ; DELIVER; PUMP; CHAMBER; HOUSING; DRUG; DELIVER; CONDUIT; CONNECT; PUMP; SENSE; CONTROL; UNIT; COMMUNICATE; SENSE; PUMP

Derwent Class: B07; P31; P34; S05; V07

International Patent Class (Main): A61M-005/142 ; A61M-005/168 ;  
 A61M-031/00 ; A61M-037/00  
 International Patent Class (Additional): A61B-005/00 ; A61M-005/172  
 File Segment: CPI; EPI; EngPI

16/5/7 (Item 7 from file: 350)  
 DIALOG(R)File 350:Derwent WPIX  
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013684259 \*\*Image available\*\*  
 WPI Acc No: 2001-168483/200117  
 XRAM Acc No: C01-050314  
 XRPX Acc No: N01-121497

**Detection of ischemia in biological tissue, e.g. myocardium of the heart, involves altering the temperature of a tissue section to be warmer or colder than normal, and recording and displaying its thermal profile**

Patent Assignee: BARD INC C R (BRDC )  
 Inventor: GAMBALE R A  
 Number of Countries: 029 Number of Patents: 004  
 Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200106919	A1	20010201	WO 2000US19936	A	20000721	200117 B
US 6277082	B1	20010821	US 99358947	A	19990722	200150
EP 1213992	A1	20020619	EP 2000948866	A	20000721	200240
			WO 2000US19936	A	20000721	
JP 2003505131	W	20030212	WO 2000US19936	A	20000721	200321
			JP 2001511815	A	20000721	

Abstract (Basic): WO 200106919 A1

NOVELTY - An ischemia in the tissue is detected by providing a catheter with optical fiber and at least one lumen; navigating the catheter through the vascular system of the patient; delivering a fluid capable of either heating or cooling a finite section of the tissue; and creating a thermal image of the temperature profile of the tissue section by the optical fiber.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for an ischemia detector comprising a catheter (14) with proximal and distal end, at least one lumen, and a temperature alteration mechanism of a finite tissue; a temperature detector for monitoring thermal response of the tissue; and a temperature display for the data collected by the temperature detector.

USE - For detection and treatment of ischemia in biological tissue such as myocardium (18) of the heart.

ADVANTAGE - The method uses a catheter-based apparatus that can monitor the thermal response of tissue after the device has been used to alter the temperature of the tissue.

DESCRIPTION OF DRAWING(S) - The figure is an illustration of an ischemic detector that uses an obturator having thermal sensors at the distal end.

Catheter (14)  
 End (16)  
 Myocardium (18)  
 Shaft (28)  
 End (30)  
 Obturator (29)  
 Tip (31)

Sensor (32, 34)  
 pp; 23 DwgNo 4/6  
 Title Terms: DETECT; ISCHAEMIC; BIOLOGICAL; TISSUE; MYOCARDIUM; HEART;  
 ALTER; TEMPERATURE; TISSUE; SECTION; WARM; COLD; NORMAL; RECORD; DISPLAY;  
 THERMAL; PROFILE  
 Derwent Class: B07; P31; P32  
 International Patent Class (Main): **A61B-005/00**  
 International Patent Class (Additional): **A61F-007/00** ; G01D-007/00;  
 G01K-001/02  
 File Segment: CPI; EngPI

16/5/8 (Item 8 from file: 350)  
 DIALOG(R) File 350:Derwent WPIX  
 (c) 2006 Thomson Derwent. All rts. reserv.

012891704 \*\*Image available\*\*  
 WPI Acc No: 2000-063539/200006  
 XRAM Acc No: C00-017847  
 XRPX Acc No: N00-049754

Apparatus for measuring parameter changes in a transparent blood flow  
 hose tube

Patent Assignee: FRESENIUS AG (FREP )  
 Inventor: MEISBERGER A  
 Number of Countries: 002 Number of Patents: 003  
 Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 19825518	A1	19991216	DE 1025518	A	19980608	200006 B
DE 19825518	C2	20011004	DE 1025518	A	19980608	200157
US 6362887	B1	20020326	US 99327822	A	19990608	200226

Priority Applications (No Type Date): DE 1025518 A 19980608  
 Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 19825518	A1	11		G01J-001/28	
DE 19825518	C2			G01J-001/28	
US 6362887	B1			G01N-021/27	

Abstract (Basic): DE 19825518 A1

NOVELTY - The apparatus for measuring changes in parameters at an object (2), which is permeable to light, has a light source (1) and an optical line sensor (3) on the opposite side of the object to register the intensity of the light passing through at positions, and a computer (4) which gives the distribution of the light intensities to be compared with at least one reference distribution.

DETAILED DESCRIPTION - Preferred Features: The line **sensor** is a charge coupled device (CCD). The lamp is a point **light** source to deliver parallel **light**. A reference distribution is stored in the computer memory, taken without any influences for the **light** passing through a dummy object to a line **sensor**, or with a known change in the **light** refraction or **light** scatter characteristic against the dummy object. The stored reference distribution takes into account known changes in the **color** filter characteristics. At least one reference distribution is a mathematical model, giving values through a curve analysis. The line **sensor** has separate **color sensors**, and especially red and green and blue, to measure the **coloration** of the object. The comparison at the computer is a correlation where the



parameter change at the measured object against a dummy object is taken as the strength of the correlation with the reference distribution for the parameter in question. The object is a medical hose **tube** (6), carrying a flow of a liquid medium (5) such as **blood**. The object can also be a divided container, with two chambers symmetrical to the dividing wall, each filled with a different liquid medium. The dividing wall lies on the symmetrical plane of the **light** source and the line **sensor**. The measured parameter changes are stored according to time, for the stored values additionally to give a dynamic change in the parameter of the liquid medium. The measurement of parameter changes, against a dummy object, is simultaneous for both chambers of a divided container. The **light** intensity distribution measured in one chamber acts as a reference distribution for the evaluation of the **light** intensity distribution measured at the other chamber. The same principle applies to a container with more than one dividing wall giving three chambers or more.

USE - For use in medical applications such as for the detection of red blood bodies, or air bubbles, in the flow through a transparent tube at an artificial kidney.

ADVANTAGE - The apparatus can be used in a variety of medical applications, where there is a liquid flow through a transparent object.

DESCRIPTION OF DRAWING(S) - The drawing shows a schematic view of the apparatus.

light source (1)  
object (2)  
CCD sensor (3)  
computer (4)  
liquid medium (5)  
hose tube (6)  
pp; 11 DwgNo 1/5

Title Terms: APPARATUS; MEASURE; PARAMETER; CHANGE; TRANSPARENT; BLOOD; FLOW; HOSE; TUBE

Derwent Class: B04; P34; S03; S05

International Patent Class (Main): G01J-001/28; G01N-021/27

International Patent Class (Additional): **A61M-001/14** ; G01J-003/46;

G01N-021/59; G01N-021/85; G01N-033/49

File Segment: CPI; EPI; EngPI

16/5/9 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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012650716 \*\*Image available\*\*

WPI Acc No: 1999-456821/199938

Related WPI Acc No: 2001-257377

XRAM Acc No: C99-133969

XRPX Acc No: N99-341598

**Apparatus for determining cardiac output of the cardiovascular system of the body of a patient, gives highly enhanced measurement rapidity without adverse consequences to body hemostasis or stability**

Patent Assignee: CARDIOX CORP (CARD-N)

Inventor: EGGERS P E; HUNTLEY S P; KHALIL G E

Number of Countries: 030 Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
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US 5928155	A	19990727	US 97792967	A	19970124	199938	B
			US 9840167	A	19980317		
EP 943289	A1	19990922	EP 99630023	A	19990312	199943	
NO 9901259	A	19990920	NO 991259	A	19990315	199949	
AU 9920332	A	19990930	AU 9920332	A	19990310	199952	
JP 11318834	A	19991124	JP 9972634	A	19990317	200006	
CA 2256915	A1	19990917	CA 2256915	A	19981222	200007	
AU 757810	B	20030306	AU 9920332	A	19990310	200324	
CA 2256915	C	20030311	CA 2256915	A	19981222	200324	

Abstract (Basic): US 5928155 A

NOVELTY - Apparatus for determining cardiac output of the cardiovascular system of the body of a patient.

DETAILED DESCRIPTION - Apparatus comprises (a) catheter with externally disposed proximal end region and oppositely disposed measurement region positionable within the bloodstream of the body; (b) indicator channel within the catheter with a fluid input at the proximal end region connected with a controlled source of analyte-containing fluid, biocompatible with and metabolizable within the body, chosen from ammoniacal fluid, heparin, ethanol, carbon dioxide-releasing fluid, glucose, anesthesia agent, but excluding oxygen, and extending to an infusion outlet at the measurement region from which the analyte-containing fluid may be expressed; and (c) analyte concentration sensor responsive to the analyte with a forward assembly configured for flowing blood contact mounted with the catheter at the measurement region at a location spaced downstream from the infusion outlet when positioned within the bloodstream and having an analyte sensor or concentration sensor output transmissible to the proximal end region corresponding with a concentration level of the analyte within the bloodstream that is correlatable with the cardiac output. INDEPENDENT CLAIMS are also included for (1) system for determining cardiac output of cardiovascular system of body; (2) method of determining cardiac output of cardiovascular system of body.

USE - Used to determine cardiac output of the cardiovascular system of the body of a patient (claimed).

ADVANTAGE - Capable of carrying out cardiac output measurements with highly enhanced measurement rapidity without adverse consequences to body hemostasis or stability. Enhance cardiac output measurements are achieved by selection of analyte-containing fluid as dilution injectate that is non-thermal, biocompatible and metabolizable within the body of the patient. Accuracy is achieved without call for multiple measurement-averaging regimen. Avoids labor-intensive cardiac output measurement processes, while making a variety of cardiovascular parameters available at a display and in conjunction with recorded media.

DESCRIPTION OF DRAWING(S) - Schematic, partially sectional view of heart showing placement and illustrating use of cardiac output-measuring catheter.

pulmonary artery catheter (60)  
distal end or tip and measurement region (62)  
partially inflated balloon (64)  
outer tip (66)  
analyte-containing fluid injectate or infusion port (70)  
measurement region (72)  
pp; 52 DwgNo 1/35

Title Terms: APPARATUS; DETERMINE; CARDIAC; OUTPUT; CARDIOVASCULAR; SYSTEM; BODY; PATIENT; HIGH; ENHANCE; MEASURE; RAPID; ADVERSE; CONSEQUENT; BODY;

HAEMOSTATIC; STABILISED  
 Derwent Class: B04; J04; P31; P34; S03; S05  
 International Patent Class (Main): **A61B-005/0215 ; A61B-005/0275 ; A61B-005/028 ; G01N-000/00**  
 International Patent Class (Additional): **A61B-005/029 ; A61B-005/14 ; A61M-025/00**  
 File Segment: CPI; EPI; EngPI

**16/5/10 (Item 10 from file: 350)**  
 DIALOG(R)File 350:Derwent WPIX  
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008480676 \*\*Image available\*\*  
 WPI Acc No: 1990-367676/199049  
 XRPX Acc No: N90-280333

**Blood vessel locating needle assembly - has thermochromic indicator located at or near needle hub**

Patent Assignee: BIO-PLEXUS INC (BIOP-N)  
 Inventor: SAHI C R  
 Number of Countries: 001 Number of Patents: 001  
 Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 4971068	A	19901120	US 89376420	A	19890707	199049 B

Priority Applications (No Type Date): US 89376420 A 19890707

Abstract (Basic): US 4971068 A

The needle assembly has a metal cannula, the cannula having a pointed distal end and defining a hollow needle bore. The cannula passes through a needle hub and its proximal end may be attached to or is integral with a fluid dispensing or collecting device such as, for example, an evacuated tube. Depending on the application, the cannula may be discontinuous and will customarily be provided with a valvew, a pressure responsive flow controller located within the hub assembly for example.

An **energy sensing** indicator, specifically a crystalline **sensing** indicator, is located at or near the needle hub and is in intimate contact with the metal **cannula**. The **sensing** indicator is configured to **detect** either thermal or mechanical changes within the **cannula** bore and to provide, directly or indirectly, a visually observable indication of such changes. The **energy sensing** indicator comprises thermochromic liquid crystals which, in response to the flow of aspirated **blood** into the bore of the needle when **blood** vessel penetration occurs, change **colour** due to the transfer of thermal **energy** from the **blood** to the liquid crystals via the metal **cannula**.

USE - For collection or dispensing of liq. samples e.g. blood from human patient. (5pp Dwg.No.2/4)

Title Terms: BLOOD; VESSEL; LOCATE; NEEDLE; ASSEMBLE; THERMOCHROMIC; INDICATE; LOCATE; NEEDLE; HUB  
 Derwent Class: P31  
 International Patent Class (Additional): **A61B-005/00**  
 File Segment: EngPI

**16/5/11 (Item 11 from file: 350)**

DIALOG(R)File 350:Derwent WPIX  
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007275340

WPI Acc No: 1987-272347/198739

XRPX Acc No: N87-203973

**Detector system for dialysis fluid tube connected to monitor - avoids false alarms during priming phase when tube is fitted with colourless fluid and detects whether system is assembled correctly**

Patent Assignee: GAMBRO AB (GAMB )

Inventor: ERICSON B I; GUMMESSON B A G; ORNDAL C H

Number of Countries: 011 Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 238809	A	19870930	EP 87101232	A	19870129	198739 B
SE 8601354	A	19870925				198745
US 4797655	A	19890110	US 8729252	A	19870323	198905
SE 459641	B	19890724				198932
EP 238809	B	19910220				199108
DE 3768033	G	19910328				199114
ES 2020518	B	19910816				199137

Abstract (Basic): EP 238809 A

The detector system has a transmitter and a receiver for a signal of preferably infrared light. A device conducts the beam through the tube when assembled on the monitor. The system can sense whether the tube is assembled in the correct position and whether the tube is filled or not. The tube can be filled with blood or a printing fluid. The receiver is joined to an arrangement for comparing the valves received at least one reference valve.

If the critical limit valves are exceeded or are failed to be attained an alarm is sounded.

USE/ADVANTAGE - Dialysis establishes whether tube is present and whether blood fills tube.

1/3

Title Terms: DETECT; SYSTEM; DIALYSE; FLUID; TUBE; CONNECT; MONITOR; AVOID; FALSE; ALARM; PRIME; PHASE; TUBE; FIT; COLOUR; FLUID; DETECT; SYSTEM; ASSEMBLE; CORRECT

Derwent Class: P34; S05

International Patent Class (Additional): A61M-001/16 ; G05D-007/06;

G08B-019/00

File Segment: EPI; EngPI

**16/5/12 (Item 12 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

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003587133

WPI Acc No: 1983-D5330K/198311

XRPX Acc No: N83-046425

**Fibre optic pH probe for tissue measurements - has needle containing colour changing dye in ion permeable tube and system for determining colour change**

Patent Assignee: US SEC OF COMMERCE (USDC )

Inventor: CHEN V T; GOLDSTEIN S R; MARKLE D R

Number of Countries: 004 Number of Patents: 001

## Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 73558	A	19830309				198311 B

Priority Applications (No Type Date): US 81296239 A 19810825

Cited Patents: DE 2215984; DE 2705370; FR 2409743; No-SR.Pub; US 3068742;  
US 4201222; US 4344438

## Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
EP 73558	A	E	13	

Designated States (Regional): DE FR GB NL

Abstract (Basic): EP 73558 A

The probe for insertion into tissue and includes a rigid hollow needle (12) having a sharp-forward end (14) and an ion-permeable membrane in the form of an ion-permeable tube (18) mounted in the needle. The needle has at least one aperture (15) exposing the tube. A pH sensitive, colour-changing, dye-containing material (19) is mounted in the tube in the region of the aperture and the forward portion of the tube adjacent this material is sealed.

A pair of optical fibres (17,20) are mounted in the tube rearwardly of and contiguous to the material (19) for respectively delivering light from an external source to the material and returning light from the material to an external sensor for measuring colour change of the material. This probe causes the min. damage or trauma to the tissue of interest. generates min. signal artefact, and provides improved output signal strength.

1/4

Title Terms: FIBRE; OPTICAL; PH; PROBE; TISSUE; MEASURE; NEEDLE; CONTAIN;  
COLOUR; CHANGE; DYE; ION; PERMEABLE; TUBE; SYSTEM; DETERMINE; COLOUR;  
CHANGE

Derwent Class: P31; S03; S05

International Patent Class (Additional): A61B-005/00

File Segment: EPI; EngPI

16/5/13 (Item 13 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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001228517

WPI Acc No: 1975-B2293W/197505

**Transmission colorimetry inside the heart or blood vessels - uses catheter to carry light to internal detector**

Patent Assignee: THOMSON MEDICAL-TELCO (THMT )

Number of Countries: 001 Number of Patents: 001

## Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
FR 2225060	A	19741206				197505 B

Priority Applications (No Type Date): FR 7312535 A 19730406

Abstract (Basic): FR 2225060 A

An in vitro catheter for transmission colorimetry of blood has two channels. One is used for perfusion of chemicals into the blood stream and exits at the side of the head. The second channel carries a bunch of optical fibres up which light from an external source is passed to the walls of a rigid transparent chamber. The other side of the chamber

has a micro-miniature phototransistor built in, and its output leads pass back down the second channel to the outside of the body. Blood flows freely into the chamber through side windows which lie between the perfusion exit and the tip of the catheter. The system permits the use of very bright external lights such as lasers and of the desired wavelength.

Title Terms: TRANSMISSION; **COLORIMETRIC** ; **HEART** ; **BLOOD** ; **VESSEL**;  
**CATHETER** ; **CARRY**; **LIGHT** ; **INTERNAL**; **DETECT**

Derwent Class: P34; S03; S05

International Patent Class (Additional): **A61M-025/00** ; G01N-021/26;  
G01N-033/16

File Segment: EPI; EngPI

?

17/5/2 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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016302419

WPI Acc No: 2004-460314/200443

Related WPI Acc No: 1997-202559; 2003-811509; 2003-862882; 2004-118840

XRAM Acc No: C04-171698

XPX Acc No: N04-364598

Simultaneously measuring in a living vessel two chemical parameters associated with an inflamed vulnerable atherosclerotic plaque, comprises measuring two parameters at sites on a vessel wall, and analyzing the parameters

Patent Assignee: TEXAS HEART INST (TEXA-N)

Inventor: CASSCELLS S W; GUO B; NAGHAVI M; WILLERSON J T

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040111016	A1	20040610	US 96717449	A	19960920	200443 B
			US 98188661	A	19981109	
			US 2003640570	A	20030812	

Abstract (Basic): US 20040111016 A1

NOVELTY - Two chemical parameters associated with an inflamed vulnerable atherosclerotic plaque are simultaneously measured by measuring two parameters at sites on a vessel wall, and analyzing parameter measurements corresponding to the sites with the use of a programmed processor to provide a qualitative or quantitative value for each parameter.

DETAILED DESCRIPTION - Simultaneously measuring in a living vessel at least two chemical parameters associated with inflamed vulnerable atherosclerotic plaque, comprises providing a fiber optic **catheter** having an illumination fiber bundle and a **detection** fiber bundle capable of, respectively, directing **radiation** into or receiving **radiation** from a site on a vessel wall. The **catheter** has a mechanism for reducing optical interference by **blood** or other fluid within a vessel when undergoing examination. A source of 400-2500 nm **wavelength radiation** operatively linked to the illumination fiber bundle is provided. A spectrometer operatively linked to **detection** fiber bundle is provided. A processor operatively linked to the spectrometer is provided containing algorithms and reference measurements for at least two chemical parameters associated with inflamed vulnerable

atherosclerotic plaque. The spectrometer and processor can receive and analyze spectral data collected by the **detection** fiber bundle and report corresponding parameter measurements. A display system capable of receiving and displaying a report from the processor is optionally provided. A first parameter at the sites on a vessel wall is measured. At least one other parameter at the sites on a vessel wall is measured. Parameter measurements are analyzed corresponding to the sites where a qualitative or quantitative value for each parameter is reported for a corresponding site or region on a vessel wall.

INDEPENDENT CLAIMS are also included for:

(a) a multi-parameter **catheter** comprising a distal and proximal ends and a **conduit**, an outer wall, an inflatable balloon, a window, an illumination lumen, a **detection** lumen, a guidewire lumen, a balloon inflation lumen, an optional fluid transporting lumen, a fiber optic illumination bundle, a fiber optic **detection** bundle, a **radiation** focusing mechanism, and a manifold; and

(b) a multi-parameter analyzer for diagnosing an atherosclerotic plaque at risk of rupture or thrombosis, comprising the **catheter**, a **light** source, a spectrometer, a processor, a display system, and an optional microcontroller.

USE - The inventive method is used in simultaneously measuring in a living vessel at least two chemical parameters associated with inflamed vulnerable atherosclerotic plaque. It can also be used in the **detection** of infection, cancer, **wounds**, or auto-immune disease in the body. (all claimed)

ADVANTAGE - The invention can determine which lesion is dangerous and needs pre-emptive treatment.

DESCRIPTION OF DRAWING(S) - The figure is a schematic diagram of a fiber optic **catheter** apparatus of the invention.

pp; 33 DwgNo 3/14

Title Terms: SIMULTANEOUS; MEASURE; LIVE; VESSEL; TWO; CHEMICAL; PARAMETER; ASSOCIATE; INFLAMMATION; VULNERABLE; ATHEROSCLEROSIS; PLAQUE; COMPRISE; MEASURE; TWO; PARAMETER; SITE; VESSEL; WALL; PARAMETER

Derwent Class: A96; B04; D16; P31; S05

International Patent Class (Main): **A61B-006/00**

File Segment: CPI; EPI; EngPI

17/5/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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016080905 \*\*Image available\*\*

WPI Acc No: 2004-238766/200422

XRAM Acc No: C04-093426

XRPX Acc No: N04-189269

Multifocal surgical probe apparatus for delivering agent to and/or gathering information on biological tissue, includes catheter having extending lumen defining deployment port, extendable-retractable needles, and deployment device

Patent Assignee: US DEPT OF HEALTH (USSH ); BETH ISRAEL DEACONESS MEDICAL CENT (BETH-N); US DEPT HEALTH & HUMAN SERVICES (USSH )

Inventor: GORBACH A M; HVIZDA J; NEEMAN Z; PERELMAN L T; WOOD B J

Number of Countries: 105 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200416155	A2	20040226	WO 2003US25575	A	20030814	200422 B

AU 2003258250 A1 20040303 AU 2003258250 A 20030814 200457  
 AU 2003258250 A8 20040303 AU 2003258250 A 20030814 200562

Abstract (Basic): WO 200416155 A2

NOVELTY - A multifocal surgical **probe** apparatus (10) includes **catheter** (24) with proximal and distal ends, and lumen (28) extending partially on distal end (22) to define a deployment port; extendable-retractable needles (15) within the **catheter** lumen; and deployment device coupled to the needles for advancing the needles through the lumen. Each needle has proximal and distal ends and one of which has delivery lumen extending partially through the needle.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

- (1) a kit comprising the above apparatus and a therapeutic or diagnostic agent;
- (2) an apparatus for determining the margins of a neoplasm (20) comprising a hollow **catheter** and deployable needles;
- (3) delivering a therapeutic or diagnostic agent to a **tissue** within a subject by providing the above multifocal delivery apparatus, advancing the distal end of the **catheter** into a target **tissue** of a subject, deploying the needles, and introducing the therapeutic or diagnostic agent through the delivery lumens of the needles into the target **tissue**; and
- (4) determining characteristic(s) of a neoplasm by providing the above multifocal fiber optic apparatus, advancing the **catheter** into a target neoplasm, deploying the tines, causing the **light** to be emitted by the fiber optic **probes** to generate spectroscopic information, and determining characteristics of the neoplasm based on the resulting spectroscopic information..

USE - The apparatus is for delivering an agent to and/or gathering information on biological **tissue**.

ADVANTAGE - The apparatus is capable of multifocal, localized delivery of agents to a **tissue** and is capable of gathering spectroscopic data and other information for characterizing the **tissue**, while providing real-time information about the progress and effects of the **tissue** ablation. The **catheter** has sufficient strength and rigidity to puncture **tissue**, e.g. to puncture and penetrate the external body surface.

DESCRIPTION OF DRAWING(S) - The figure is a schematic view of the multifocal surgical **probe** apparatus.

Surgical **probe** apparatus (10)  
 Needles (15)  
 Neoplasm (20)  
 Distal end (22)  
**Catheter** (24)  
 Skin (26)  
 Lumen (28)  
 pp; 35 DwgNo 1/9

Title Terms: MULTIFOCAL; SURGICAL; **PROBE**; APPARATUS; DELIVER; AGENT;  
 GATHER; INFORMATION; BIOLOGICAL; **TISSUE**; **CATHETER**; EXTEND; LUMEN;  
 DEFINE; DEPLOY; PORT; EXTEND; RETRACT; NEEDLE; DEPLOY; DEVICE  
 Derwent Class: B04; B07; P31; S05; T01; V07  
 International Patent Class (Main): A61B-000/00  
 File Segment: CPI; EPI; EngPI

17/5/4 (Item 4 from file: 350)  
 DIALOG(R) File 350:Derwent WPIX



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016080904

WPI Acc No: 2004-238765/200422

XRAM Acc No: C04-093425

XPX Acc No: N04-189268

**Identifying sentinel lymph nodes, useful in the prognostic and diagnostic analysis of cancer, involves administering a composition comprising a marker nucleic acid segment and determining its presence in lymph node**

Patent Assignee: WAYNE CANCER INST JOHN (WAYN-N)

Inventor: HOON D S B; TABACK B

Number of Countries: 106 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200416154	A2	20040226	WO 2003US25553	A	20030815	200422 B
AU 2003268105	A1	20040303	AU 2003268105	A	20030815	200457
US 20050142556	A1	20050630	US 2002403872	P	20020816	200543
			US 2003641595	A	20030815	
EP 1560924	A2	20050810	EP 2003749055	A	20030815	200552
			WO 2003US25553	A	20030815	

Abstract (Basic): WO 200416154 A2

NOVELTY - Identifying (M1) sentinel lymph nodes (SLN), involves administering a composition comprising a marker nucleic acid segment to a human regional to SLN, and determining the presence or absence of the marker nucleic acid segment in a lymph node, where the presence of the marker nucleic acid segment in the lymph node identifies the lymph node as SLN.

ACTIVITY - Cytostatic.

No biological data given.

MECHANISM OF ACTION - Gene therapy.

USE - (M1) is useful for identifying sentinel lymph nodes in a human who is at risk of cancer or cancer metastasis. The human subject has been diagnosed with a solid cancer or diagnosed with cancer and is believed to be in remission. The cancer is solid tumor cancer chosen from breast cancer, gastrointestinal cancer, melanoma, lymphoma, squamous carcinoma, merkel cell cancer, **colorectal** cancer, pancreatic cancer, gastric cancer, thyroid cancer, **renal** cancer, **bladder** cancer, prostate cancer, esophageal cancer, vulvar cancer, ovarian cancer, penile cancer, head and neck cancer and **lung** cancer. (M1) is also useful as part of a treatment method for cancer comprising delivery of a therapeutic gene or genes to the SLN to activate tumor immunity to tumor cells, and/or to inhibit tumor metastases (claimed).

pp; 90 DwgNo 0/9

Title Terms: IDENTIFY; LYMPH; NODE; USEFUL; PROGNOSIS; DIAGNOSE; ANALYSE; CANCER; ADMINISTER; COMPOSITION; COMPRISE; MARK; NUCLEIC; ACID; SEGMENT; DETERMINE; PRESENCE; LYMPH; NODE

Derwent Class: B04; D16; K08; P31; S03

International Patent Class (Main): **A61B-000/00** ; C12Q-001/68

File Segment: CPI; EPI; EngPI

17/5/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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016033786 \*\*Image available\*\*

WPI Acc No: 2004-191637/200418

XRAM Acc No: C04-075638

XRPX Acc No: N04-152012

**New system comprising agglutinative particles capable of interacting with an analyte to cause an optical change, and an in vivo imaging system for detecting the optical change, useful for in vivo analysis of a body lumen**

Patent Assignee: GIVEN IMAGING LTD (GIVE-N)

Inventor: PALTI Y

Number of Countries: 106 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200414227	A1	20040219	WO 2003IL651	A	20030807	200418 B
AU 2003249551	A1	20040225	AU 2003249551	A	20030807	200456
EP 1534120	A1	20050601	EP 2003784455	A	20030807	200536
			WO 2003IL651	A	20030807	

Abstract (Basic): WO 200414227 A1

NOVELTY - A system for **in vivo** analysis, comprising agglutinative particles capable of interacting with at least one analyte to cause an optical change, and at least one **in vivo** imaging system configured for **detecting** the optical change, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) a device for **in vivo** analysis comprising the system defined above;

(2) an ingestible capsule comprising:

(a) an optical window having immobilized into it agglutinative particles capable of interacting with at least one analyte to cause an optical change;

(b) at least one imaging system configured for **detecting** at least the optical change; and

(c) a transmitter configured for transmitting image data to an external receiving system; and

(3) a method for **in vivo** analysis comprising:

(a) obtaining a sample from a body lumen;

(b) combining the **in vivo** sample with agglutinative particles;

and

(c) **detecting** at least one optical change in the combined sample.

USE - The system is useful for **in vivo** and **in situ** sampling and analysis of conditions prevailing in a body lumen.

DESCRIPTION OF DRAWING(S) - The figure presents a device comprising a system for **in vivo** analysis of the body lumen.

Device; (100)

Shell; (101)

Sampling chamber; (102)

Membrane; (102')

Chamber sides; (125')

Bottom of the chamber; (126)

Optical window; (210)

Optical system; (220)

Illumination unit; (230)

Image **sensor** ; (240)

Power source; (250)

Transmitter; (260)

Antenna; (270)

Gastrointestinal fluids (370)

pp; 28 DwgNo 1/4

Title Terms: NEW; SYSTEM; COMPRISE; PARTICLE; CAPABLE; INTERACT; ANALYTE;  
 CAUSE; OPTICAL; CHANGE; VIVO; IMAGE; SYSTEM; **DETECT** ; OPTICAL; CHANGE;  
 USEFUL; VIVO; ANALYSE; BODY; LUMEN  
 Derwent Class: B04; D16; P31; S03; S05  
 International Patent Class (Main): **A61B-005/00**  
 File Segment: CPI; EPI; EngPI

17/5/6 (Item 6 from file: 350)  
 DIALOG(R)File 350:Derwent WPIX  
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015853875 \*\*Image available\*\*  
 WPI Acc No: 2004-011707/200401  
 XRAM Acc No: C04-003378  
 XRPX Acc No: N04-008607

System for detecting one or more cardiovascular risk factor analytes  
 e.g., cholesterol, lipoprotein A, in fluid comprises light source,  
 sensor array formed from a supporting member and a detector

Patent Assignee: UNIV TEXAS SYSTEM (TEXA ); ANSLYN E V (ANSL-I);  
 CHRISTODOULIDES N J (CHRI-I); MCDEVITT J T (MCDE-I); NEIKIRK D P (NEIK-I)  
 ; SHEAR J B (SHEA-I)  
 Inventor: ANSLYN E V; CHRISTODOULIDES N J; MCDEVITT J T; NEIKIRK D P; SHEAR  
 J B

Number of Countries: 104 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200390605	A2	20031106	WO 2003US12951	A	20030428	200401 B
US 20040029259	A1	20040212	US 2002375775	P	20020426	200412
			US 2003427744	A	20030428	
AU 2003228711	A1	20031110	AU 2003228711	A	20030428	200442
EP 1502097	A2	20050202	EP 2003726476	A	20030428	200510
			WO 2003US12951	A	20030428	

Abstract (Basic): WO 200390605 A2

NOVELTY - System (I) for **detecting** one or more cardiovascular risk factor analytes in fluid comprises **light** source, **sensor** array having supporting member with cavities formed within member, several particles positioned within cavity, where particle produces signal in presence of cardiovascular risk factor analyte during use and **detector** is configured to **detect** signal produced by particles during use.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a **sensor** array for **detecting** one or more cardiovascular risk factor analytes in a fluid comprising, a supporting member having several cavities formed within the supporting member, several particles, each particles positioned within a cavity, where at least one particle is configured to produce a signal in the presence of a cardiovascular risk factor analyte during use.

USE - (I) is useful for **detecting** one or more cardiovascular risk factor analytes in a fluid, which involves passing the fluid over a **sensor** array, the **sensor** array comprises a supporting member having several cavities formed within the supporting member, several particles positioned within a cavity, where at least one particle is configured to produce a signal in the presence of a cardiovascular risk factor analyte during use, and monitoring a spectroscopic change of one or more of the particles as the fluid is passed over the **sensor** array. The **sensor** array further comprises a bottom layer and a cover, where

the bottom layer is coupled to a bottom surface of the supporting member, and where the cover is coupled to a top surface of the supporting member, and where both the bottom layer and the cover are coupled to the supporting member such that at least a portion of the particles are substantially contained within one or more cavities by the bottom layer and the cover, and where the bottom layer and the cover are substantially transparent to **light** produced by the **light** source. The **sensor** array further comprises a bottom layer coupled to the supporting member, and where the supporting member comprises silicon, and where the bottom layer comprises silicon nitride. The **sensor** array further comprises a cover, the cover being coupled to the supporting member such that at least a portion of the particles are substantially contained within one or more cavities by the cover, and where the cover is configured to allow the fluid to pass through the cover to at least a portion of the particles, and where both the supporting member and the cover are substantially transparent to **light** produced by the **light** source. The **sensor** array further comprises a cover positioned at a distance above the upper surface of the supporting member such that an opening is formed between the supporting member and the cover to allow the fluid to enter one or more cavities through the opening, and where the cover inhibits dislodgement of at least a portion of the particles from one or more cavities during use. One or more cavities are configured such that the fluid entering one or more cavities passes through the supporting member during use. One or more cavities are substantially tapered such that the width of one or more cavities narrows in a direction from top surface of the supporting member toward a bottom surface of the supporting member, and where a minimum width of one or more cavities is substantially less than a width of at least a portion of the particles. An inner surface of one or more cavities is coated with a reflective material. At least a portion of the particles comprises a receptor molecule coupled to a polymeric resin, where the polymeric resin comprises polystyrene-polyethylene glycol-divinyl benzene. At least a portion of the particles comprise a receptor molecule coupled to a polymeric resin, and where at least a portion of the particles further comprises a first indicator and a second indicator, the first and second indicators being coupled to the receptor, where the interaction of the receptor with the analyte causes the first and second indicators to interact such that the signal is produced. At least a portion of the particles comprise a receptor molecule coupled to a polymeric resin, and where at least a portion of the particles further comprise an indicator, where the indicator is associated with the receptor such that in the presence of the analyte the indicator is displaced from the receptor to produce the signal. At least a portion of the particles comprise a receptor molecule coupled to a polymeric resin, and where the receptor comprises a peptide, an enzyme, a synthetic receptor, an antibody or an antigen. At least a portion of the particles produce a **detectable** pattern in the presence of a cardiovascular risk factor analyte. The cardiovascular risk factor analyte comprises c-reactive protein or interleukin-6. The cardiovascular risk factor is high density lipoprotein, low density lipoprotein, very low density lipoprotein, cholesterol, C-reactive protein, interleukin-6, intercellular adhesion molecule-1, fibrinogen, homocysteine, folate, calcium, lipoprotein A, apolipoprotein A-1, apolipoprotein B, *Helicobacter pylori*, *Chlamydia pneumoniae*, Herpes virus hominis, or cytomegalovirus. The method further involves simultaneously determining the presence of two or more cardiovascular risk factor analytes in a

fluid sample. All of the particles are configured to produce a **detectable** signal in the presence of a **cardiac** risk factor. The supporting member comprises silicon, plastic material, dry film photoresist material or several layers of a dry film photoresist material (all claimed).

DESCRIPTION OF DRAWING(S) - The figure shows a portable **sensor** array system.

portable **sensor** array system (1000)

**sensor** array cartridge (1010)

alphanumeric display screen (1014)

ports (1020,1022)

syringe (1030)

nucleopore filters (1040)

pp; 104 DwgNo 18/42

Title Terms: SYSTEM; **DETECT** ; ONE; MORE; CARDIOVASCULAR; RISK; FACTOR; ANALYTE; CHOLESTEROL; LIPOPROTEIN; FLUID; COMPRISE; **LIGHT** ; SOURCE; **SENSE** ; ARRAY; FORMING; SUPPORT; MEMBER; **DETECT**

Derwent Class: A89; B04; D16; L03; P31; S03; S05; U12; U13

International Patent Class (Main): **A61B-000/00** ; C12M-001/34; G01N-021/64

International Patent Class (Additional): B01J-019/00; G01N-035/00

File Segment: CPI; EPI; EngPI

17/5/8 (Item 8 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015331256 \*\*Image available\*\*

WPI Acc No: 2003-392191/200337

Related WPI Acc No: 2006-181803

XRFX Acc No: N03-313324

In - vivo **imaging device for endoscopic imaging system, has light sources to provide different illumination spectrum corresponding to each imaging period**

Patent Assignee: GLUKHOVSKY A (GLUK-I)

Inventor: GLUKHOVSKY A

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030028078	A1	20030206	US 2001309181	P	20010802	200337 B
			US 2002208832	A	20020801	

Priority Applications (No Type Date): US 2001309181 P 20010802; US

2002208832 A 20020801

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

US 20030028078 A1 18 A62B-001/04 Provisional application US 2001309181

Abstract (Basic): US 20030028078 A1

NOVELTY - Each **light** sources (30A-30C) output different illumination spectrum at specific imaging periods and a CMOS image **sensor** (24A) captures a precursor image during each imaging period. Different illumination spectrums are provided corresponding to the imaging periods. The set of images captured during the imaging cycles are combined to produce a **color** image.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) **color** imaging method;

- (2) image display system;
- (3) image display method;
- (4) swallowable **in - vivo** imaging capsule; and
- (5) **in - vivo** imaging unit.

USE - **In - vivo** imaging device e.g. endoscope like devices and **catheter** like devices for medical application, for insertion into body cavity or lumen, coronary arteries, ureter or urethra or common for performing **in - vivo** imaging of passages e.g. gastrointestinal tract using endoscopes, laproscopes and gastroscopes.

ADVANTAGE - Enables increasing efficiency of **in - vivo** imaging device as final image is obtained by processing pre-cursor images created using different spectra or **colors**.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic functional block diagram of the **in - vivo** imaging device.

Image **sensor** (24A)

**Light** sources (30A-30C)

pp; 18 DwgNo. 2a/6

Title Terms: VIVO; IMAGE; DEVICE; ENDOSCOPE; IMAGE; SYSTEM; **LIGHT** ; SOURCE ; ILLUMINATE; SPECTRUM; CORRESPOND; IMAGE; PERIOD

Derwent Class: P31; P35; S03; S05; T01; W02; W04

International Patent Class (Main): A62B-001/04

International Patent Class (Additional): **A61B-001/04**

File Segment: EPI; EngPI

**17/5/10 (Item 10 from file: 350)**

DIALOG(R) File 350:Derwent WPIX

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015029571

WPI Acc No: 2003-090088/200308

XRAM Acc No: C03-022725

XRPX Acc No: N03-071112

**Changing acoustic reflectivity of ultrasound target for monitoring the temperature of a tissue in a patient, comprises administering a nongaseous acoustic imaging substance**

Patent Assignee: BARNES-JEWISH HOSPITAL (BARN-N); HALL C S (HALL-I); LANZA G M (LANZ-I); WICKLINE S A (WICK-I)

Inventor: HALL C S; LANZA G M; WICKLINE S A

Number of Countries: 101 Number of Patents: 005.

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20020102216	A1	20020801	US 2001774278	A	20010130	200308	B
WO 200260524	A2	20020808	WO 2002US2631	A	20020130	200308	
EP 1363538	A2	20031126	EP 2002706070	A	20020130	200380	
			WO 2002US2631	A	20020130		
AU 2002240177	A1	20020812	AU 2002240177	A	20020130	200427	
JP 2005503836	W	20050210	JP 2002560714	A	20020130	200511	
			WO 2002US2631	A	20020130		

Abstract (Basic): US 20020102216 A1

NOVELTY - Changing (M1) acoustic reflectivity of an ultrasound target, comprises:

(a) administering to the target, a nongaseous acoustic imaging substance (I) which binds to the target and produces a change in acoustic reflectivity with a change in temperature; and

(b) changing the temperature to produce a measurable change in

acoustic reflectivity of (I) bound to the target.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) measuring (M2) enhanced acoustic reflectivity of an ultrasound target, comprising:

(a) administering (I) to the target;  
(b) changing the temperature to produce a measurable change in acoustic reflectivity of (I) bound to the target; and

(c) **detecting** a change in acoustic reflectivity of the bound substance;

(2) monitoring (M3) the temperature of a **tissue** in a patient, comprising:

(a) administering (I) to the patient;

(b) **detecting** acoustic reflectivity of (I) bound to the **tissue** ;  
and

(c) calculating temperature of (I) bound to the **tissue** ; and

(3) a device (II) for measuring changes in temperature of a target having a temperature sensitive acoustic imaging substance bound to it, comprising:

(i) a component configured to change the temperature of the acoustic imaging substance;

(ii) an ultrasound source configured to transmit acoustic **energy** to the target;

(iii) an ultrasound **detecting** component configured to measure acoustic reflectivity of the surface; and

(iv) a comparator which determines acoustic reflectivity of the target upon changing temperature relative to acoustic reflectivity of the target in absence of changing temperature.

USE - The method is used for changing the acoustic reflectivity of an ultrasound target. (I) is used to measure enhanced acoustic reflectivity of an ultrasound target. (I) is used to monitor the temperature of a **tissue** in a patient (claimed).

ADVANTAGE - (M1) enhances **detection** of acoustic reflectivity of an ultrasound target (claimed).

pp; 25 DwgNo 0/7

Title Terms: CHANGE; ACOUSTIC; REFLECT; ULTRASONIC; TARGET; MONITOR;  
TEMPERATURE; **TISSUE** ; PATIENT; COMPRISE; ADMINISTER; ACOUSTIC; IMAGE;  
SUBSTANCE

Derwent Class: B04; D16; P31; P34; S03; S05

International Patent Class (Main): **A61B-008/00** ; A61K-049/00; A61N-000/00

International Patent Class (Additional): **A61B-005/05** ; **A61B-005/055** ;

**A61B-005/06** ; A61K-009/127; A61K-009/133; A61K-009/14; A61K-048/00;

A61K-049/04; A61K-051/00; G01R-033/28

File Segment: CPI; EPI; EngPI

17/5/17 (Item 17 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014434680 \*\*Image available\*\*

WPI Acc No: 2002-255383/200230

Related WPI Acc No: 2002-536819; 2004-532694; 2005-064114; 2005-149696

XRPX Acc No: N02-197451

**Selective image providing apparatus for ROI in patient's body, energizes light source selectively to image ROI for diagnosing, sensing and monitoring specific condition in ROI and providing therapy to ROI**

Patent Assignee: UNIV WASHINGTON (UNIW ); SEIBEL E J (SEIB-I)

Inventor: SEIBEL E; SEIBEL E J

Number of Countries: 094. Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20010055462	A1	20011227	US 2000212411	P	20000619	200230 B
			US 2001850594	A	20010507	
AU 200174933	A	20020102	AU 200174933	A	20010523	200230
WO 200197902	A2	20011227	WO 2001US16844	A	20010523	200230
JP 2003535659	W	20031202	WO 2001US16844	A	20010523	200382
			JP 2002503383	A	20010523	
AU 2001274933	A8	20050915	AU 2001274933	A	20010523	200569
US 6975898	B2	20051213	US 2000212411	P	20000619	200581
			US 2001850594	A	20010507	

Abstract (Basic): US 20010055462 A1

NOVELTY - An optical fiber (94) has proximal and distal ends connected to a **light** source and a **tubular** piezoelectric actuator (95) scanning region of interest (ROI). A controller controls the actuator and is coupled to the fiber and **light** source, for selectively energizing the source to image ROI for diagnosing, **sensing** and monitoring specific condition in the ROI and providing a therapy to ROI.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) Integral **light** guide system utilization method;

(b) Region of interest automatic scanning apparatus and method

USE - For selectively providing image of ROI in a patient's body. The apparatus is also used for fluorescence, thermal and **tissue** imaging using respective UV, visible and IR **wavelengths**, concentric confocal and true confocal imaging, imaging through **blood** using IR **wavelengths**, polarization-contrast imaging, laser induced fluorescence (LIF) and ratio fluorescence imaging and **detection**, multi-photon excitation fluorescence imaging, fluorescence life time imaging and analysis, laser feedback microscopy, optical coherence tomograph (OCT) and reflectometry (OCR), optical stimulated vibro-acoustography analysis, true sizing of image structures using stereo and range finding options, laser induced fluorescence spectroscopy (LIFS), Raman spectroscopy analysis, elastic, scattering spectroscopy (ESS) analysis, absorption spectroscopy, **detection** and mapping of chemi-luminescence and cell viability, spatial mapping of optical **sensor** data, temperature measurement and feedback control, other measurements such as **color**, laser power delivery, **tissue** properties, photobleaching and photocreation of compounds for monitoring and feedback control, photodynamic therapy, hypothermia treatment, laser surgeries, photoactivated chemistry, photopolymerization and implantation of biomaterials, laser cauterization, destruction of **tissue** using shock waves, interactive displays and advanced user interface design, interactive touch/point screen, quasi-stereo on display monitors, stereographic mapping using pseudo **color** overlay and true 3D display formats.

ADVANTAGE - The apparatus has lower cost with integration and uses low cost components, has lower flexural rigidity allowing greater access within the body. Provides faster procedural times, provides greater accuracy with integrated high-resolution images and interactive display. Provides lower risk to patient for infection from multiple tools or incisions and provides faster recovery times for patient with



less damage to health **tissues** and less anesthetics, by accurately determining scanning motion (velocity, position, frequency, etc) of optical fiber, provides additional features with scanning optical system, such as variable resolution (real-time zooming) and enhanced stereo effects (shading) and provides additional functionality with integrated long visible optical sources and **detectors**.

DESCRIPTION OF DRAWING(S) - The figure shows the components of rectilinear scanning optical fiber for selectively scanning-in either or both of two transverse directions.

Optical fiber (94)

**Tubular** piezoelectric actuator (95)

pp; 36 DwgNo 3A/12

Title Terms: SELECT; IMAGE; APPARATUS; PATIENT; BODY; ENERGISE; **LIGHT** ;  
SOURCE; SELECT; IMAGE; DIAGNOSE; **SENSE** ; MONITOR; SPECIFIC; CONDITION;  
THERAPEUTIC

Derwent Class: P31; P81; S05; V07

International Patent Class (Main): **A61B-001/04** ; **A61B-006/00** ;

A61N-000/00; G02B-006/00

International Patent Class (Additional): **A61B-001/00** ; **A61B-018/20** ;

G01N-021/27; G01N-021/64; H04N-007/18

File Segment: EPI; EngPI

17/5/19 (Item 19 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014154369 \*\*Image available\*\*

WPI Acc No: 2001-638588/200173

Related WPI Acc No: 2001-615477

XRAM Acc No: C01-188859

XRPX Acc No: N01-477319

**Disposable high density optically readably polydeoxynucleotide array for surgical applications, comprises an excitation source, optically detectable probe, and optical property detector**

Patent Assignee: CROWLEY R J (CROW-I)

Inventor: CROWLEY R J

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20010029328	A1	20011011	US 9871906	A	19980120	200173 B
			US 99233409	A	19990119	
			US 2001881283	A	20010614	

Priority Applications (No Type Date): US 9871906 P 19980120; US 99233409 A 19990119; US 2001881283 A 20010614

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 20010029328	A1	13	A61B-005/04	Provisional application US 9871906

Cont of application US 99233409

Abstract (Basic): US 20010029328 A1

NOVELTY - A disposable high density optically readable polydeoxynucleotide array comprises an excitation source, optically **detectable probe**, and an optical property **detector**.

DETAILED DESCRIPTION - A disposable high density optically readable

polydeoxynucleotide array (11) comprises:

- (a) an excitation source;
- (b) an optically **detectable probe** directed to an analyte; and
- (c) a **detector** for **detecting** optical properties of the **probe**.

The **detector** is configured for converting optical signals representative of the **detected** optical properties to electrical signals. The source, **probe**, and **detector** are adapted for placement together in an area of interest within a body.

USE - The device is used as a disposable high density optically readable polydeoxynucleotide array useful in surgical application.

ADVANTAGE - The invention performs specific **detection** and analysis of biological analytes **in vivo** using a simplified, low cost set of components. The **probe** materials may be incorporated into the substrate, which may be a flat surface and which allows ink printing processes to be used to deposit the **probe** array materials at high speeds and at low cost. It can also be used anywhere there is the need for fast, precise localized **detection** and analysis of nucleotides, or proteins, either for diagnostic purposes, or to guide therapy which itself may be made more localized, and thus site-specific. Such uses are economical and have less impact on surrounding **tissue** that is free of disease. It allows the use of any agent that may change **color** as a result of the application of a local chemical to be read and includes without limitation such agents as litmus, photodynamic therapeutic agents, such as photofrin, fluorescent agents or dyes, staining dyes, or luciferin. It also permits analysis in a real time fashion without the need to remove and transport **tissue** specimens for later analysis.

DESCRIPTION OF DRAWING(S) - The figure shows a planar view of a **probe** array.

Array (11)

Chambers (13)

Frame (17)

pp; 13 DwgNo 1/6

Title Terms: DISPOSABLE; HIGH; DENSITY; OPTICAL; ARRAY; SURGICAL; APPLY; COMPRISE; EXCITATION; SOURCE; OPTICAL; **DETECT** ; **PROBE** ; OPTICAL; PROPERTIES; **DETECT**

Derwent Class: B04; D16; P31

International Patent Class (Main): **A61B-005/04**

International Patent Class (Additional): **A61B-005/05**

File Segment: CPI; EngPI

17/5/21 (Item 21 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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013882306

WPI Acc No: 2001-366518/200138

Related WPI Acc No: 1992-141666; 1994-007124; 1996-009504; 1996-259512; 1998-062055; 2001-289391; 2002-146549

XRAM Acc No: C01-112352

XRPX Acc No: N01-267365

Detection of margins and dimensions of tumor tissue involves illuminating breast tissue, with illumination source emitting electromagnetic radiation, and administering dye

Patent Assignee: UNIV WASHINGTON (UNIW )

Inventor: HAGLUND M M; HOCHMAN D

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6241672	B1	20010605	US 90565454	A	19900810	200138 B
			US 92894270	A	19920608	
			US 9373353	A	19930607	
			US 95477468	A	19950607	
			US 97993733	A	19971218	

Priority Applications (No Type Date): US 95477468 A 19950607; US 90565454 A 19900810; US 92894270 A 19920608; US 9373353 A 19930607; US 97993733 A 19971218

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6241672	B1	26	A61B-005/00		CIP of application US 90565454 CIP of application US 92894270 CIP of application US 9373353 Cont of application US 95477468 CIP of patent US 5215095 CIP of patent US 5438989 CIP of patent US 5465718 Cont of patent US 5699798

Abstract (Basic): US 6241672 B1

NOVELTY - Margins and dimensions of tumor **tissue** are **detected** by illuminating an area of interest with illumination source emitting electromagnetic **radiation**, and administering dye to the area of interest. Optical properties are then **detected**, and tumor is distinguished from non-tumor **tissue** based on the differences of the optical properties in the comparison data set.

DETAILED DESCRIPTION - **Detection** of margins and dimensions of tumor **tissue** involves illuminating an area of interest with illumination source emitting electromagnetic **radiation** (emr), and administering dye to the area of interest. Optical properties of the area of interest are **detected** after the administration of the dye, to acquire a subsequent data set. The subsequent data set is compared with a control data set representing the optical properties of the area of interest before the administration of the dye, to produce a comparison data set. Tumor is distinguished from non-tumor **tissue** based on the differences of the optical properties in the comparison data set. The differences in the optical properties represent different dynamics of dye perfusion in tumor and non-tumor **tissue**.

USE - The method is for **detecting** the presence of tumor **tissue**, such as underneath of intact skin or bone, or breast **tissue**. It is also for identifying and mapping the margins of solid tumors during surgical or diagnostic procedures, and for grading and characterizing solid tumor **tissue** to distinguish malignant from non-malignant tumor **tissue**.

ADVANTAGE - The inventive method can optically image and distinguish low grade tumors that cannot be distinguished by conventional magnetic resonance imaging (MRI) techniques. The produced image can be updated continually during surgical procedure by readministering the dye. The inventive method provides information in real time, thus it can be employed intraoperatively.

pp; 26 DwgNo 0/11

Title Terms: **DETECT**; MARGIN; DIMENSION; TUMOUR; **TISSUE**; ILLUMINATE; BREAST; **TISSUE**; ILLUMINATE; SOURCE; EMIT; ELECTROMAGNET; **RADIATE**;

ADMINISTER; DYE  
 Derwent Class: B04; P31; S03; S05  
 International Patent Class (Main): A61B-005/00  
 File Segment: CPI; EPI; EngPI

17/5/22 (Item 22 from file: 350)  
 DIALOG(R)File 350:Derwent WPIX  
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013773532 \*\*Image available\*\*  
 WPI Acc No: 2001-257743/200126  
 Related WPI Acc No: 2001-235153; 2001-257742  
 XRAM Acc No: C01-077617  
 XRPX Acc No: N01-183846

**Non-invasive determination of the oxygen saturation of a mixture of a liquid and blood cells, e.g. in dialysis apparatus, comprises determining blood characteristics using the intensity of reflected light from the mixture**

Patent Assignee: OPTOQ AB (OPTO-N)  
 Inventor: ENLUND G; LINDBERG L; VEGFORS M  
 Number of Countries: 094 Number of Patents: 004  
 Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200117421	A1	20010315	WO 2000SE1740	A	20000907	200126 B
AU 200074664	A	20010410	AU 200074664	A	20000907	200137
EP 1210008	A1	20020605	EP 2000963216	A	20000907	200238
			WO 2000SE1740	A	20000907	
JP 2003508144	W	20030304	WO 2000SE1740	A	20000907	200319
			JP 2001521218	A	20000907	

Abstract (Basic): WO 200117421 A1

NOVELTY - Non-invasive determination of the oxygen saturation (SpO2) of a mixture of liquid and **blood** cells comprises:  
 (a) directing **light** beams at the mixture;  
 (b) determining **blood** characteristic(s) other than by analyzing the intensity of the **light** reflected from the mixture;  
 (c) determining SpO2 of the mixture; and, optionally  
 (d) establishing whether the result of step (c) is relevant based on the result of step (b).

DETAILED DESCRIPTION - Non-invasive determination of oxygen saturation, SpO2, of a mixture of liquid and **blood** cells comprises:  
 (a) directing **light** beams against the mixture;  
 (b) determining **blood** characteristic(s) other than SpO2, including hemoglobin of the mixture, by analyzing the intensity of the **light** reflected from the mixture or, the intensity of the **light** reflected from the mixture in combination with the intensity of the **light** transmitted through the mixture;  
 (c) determining the oxygen saturation, SpO2, of the mixture by analyzing the intensity of the **light** transmitted through the mixture; and, optionally  
 (d) establishing whether the result of step (c) is relevant based on the result of step (b).

INDEPENDENT CLAIMS are also included for:

(1) an apparatus for accurate determination of SpO2 from a mixture of liquid and **blood** cells contained in a **light** pervious vessel comprising:

(a) **light** sources for directing **light** beams against the vessel;  
 (b) a means for determining a **blood** characteristic other than oxygen saturation, SpO<sub>2</sub>, including hemoglobin, and capable of analyzing the intensity of the **light** reflected from the vessel optionally in combination with the intensity of the **light** transmitted through the mixture;

(c) a means for determining oxygen saturation, SpO<sub>2</sub>, of the mixture, preferably pulse-oximetrically, and capable of analyzing intensity of **light** transmitted through mixture; and optionally

(d) a means for establishing whether the determined value of SpO<sub>2</sub> is relevant with respect to the determined value of the **blood** characteristic; and

(2) a computer program stored on a data carrier for performing the inventive method.

USE - The methods and apparatus are used for non-invasively determining oxygen saturation of a mixture of liquid and **blood** cells, in addition to measurements of **blood** characteristics, e.g. hemoglobin, in a dialysis apparatus, a cell saver, dialysis monitors, on a **blood** bag assembly, on a slaughterhouse device, or on a **blood** fractionation device. Alternatively, the methods and apparatus are used for non-invasively determining oxygen saturation of a mixture of liquid and **blood** cells in a mammal, preferably a human. The methods and apparatus may also be used to determine other **blood** characteristics e.g. the concentrations of various **blood** components such as hemoglobin, total hemoglobin, red **blood** cells, white **blood** cells, platelets, cholesterol, albumin, thrombocytes, lymphocytes, drugs and other substances, viscosity, **blood** pressure, **blood** flow, **blood** volume, **blood** cell illnesses, abnormal **blood** cell appearances, anemia, leukemia and lymphoma.

ADVANTAGE - The method provides pulse oximetry measurements with increased accuracy by reflection and transmittance measurements:

- (1) on central arterial **blood** vessels better reflecting the oxygenation than peripheral vascular beds;
- (2) on-line correction for hematocrit (the volume of **blood** cells per volume of **blood**) values affecting the accuracy; and
- (3) simultaneous results of oxygenation saturation and **blood** values (e.g. hematocrit) improving the quality and safety in patient monitoring (sic).

The method also provides more accurate oxygen saturation **detection** values. It does not involve an extra step of making the apparatus sterile before measuring or the requirement for disposable tips. It is less sensitive to variations in **blood** pressure, e.g. pulsative (systolic) pressure and there is no requirement for withdrawing **blood** from the vascular system thus removing the need for needles and syringes and also reducing the associated risks of AIDS or hepatitis transmission.

DESCRIPTION OF DRAWING(S) - The figure shows a flow model for **detection** of **light** reflection.

pp; 87 DwgNo 1/19

Title Terms: NON; INVADE; DETERMINE; OXYGEN; SATURATE; MIXTURE; LIQUID; **BLOOD** ; CELL; DIALYSE; APPARATUS; COMPRISE; DETERMINE; **BLOOD** ; CHARACTERISTIC; INTENSITY; REFLECT; **LIGHT** ; MIXTURE

Derwent Class: B04; P31; S03

International Patent Class (Main): **A61B-005/00** ; **A61B-005/145**

International Patent Class (Additional): G01N-021/55; G01N-033/49

File Segment: CPI; EPI; EngPI

17/5/25 (Item 25 from file: 350)  
 DIALOG(R) File 350:Derwent WPIX  
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013586826 \*\*Image available\*\*  
 WPI Acc No: 2001-071033/200108  
 Related WPI Acc No: 2003-787235  
 XRAM Acc No: C01-019857  
 XRPX Acc No: N01-053755

**Disposable fluid processing set for treating blood or blood components, includes tube connecting primary and secondary chambers separated by holder during processing**

Patent Assignee: BAXTER INT INC (BAXT ); CERUS CORP (CERU-N); CIMINO G D (CIMI-I); CLARKE M S (CLAR-I); DEGHELDERE S (DEGH-I); HEI D J (HEID-I); METZEL P S (METZ-I); MOHIUDDIN M (MOHI-I)

Inventor: CIMINO G D; CLARKE M S; DE GHELDERE S; HEI D J; METZEL P S; MOHIUDDIN M; DEGHELDERE S; METZEL P

Number of Countries: 035 Number of Patents: 012

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200074806	A1	20001214	WO 2000US15065	A	20000531	200108 B
AU 200054551	A	20001228	AU 200054551	A	20000531	200119
BR 200011123	A	20020226	BR 200011123	A	20000531	200223
			WO 2000US15065	A	20000531	
EP 1191990	A1	20020403	EP 2000939469	A	20000531	200230
			WO 2000US15065	A	20000531	
CN 1353623	A	20020612	CN 2000808380	A	20000531	200262
ZA 200108986	A	20021127	ZA 20018986	A	20011031	200305
JP 2003501175	W	20030114	WO 2000US15065	A	20000531	200306
			JP 2001501335	A	20000531	
US 20030085173	A1	20030508	US 99325599	A	19990603	200337
			US 2002267566	A	20021008	
NZ 515445	A	20030926	NZ 515445	A	20000531	200366
			WO 2000US15065	A	20000531	
AU 780452	B2	20050324	AU 200054551	A	20000531	200528
IN 200101430	P3	20051021	WO 2000US15065	A	20000531	200580
			IN 2001MN1430	A	20011115	
CN 1148248	C	20040505	CN 2000808380	A	20000531	200610

Abstract (Basic): WO 200074806 A1

NOVELTY - Processing set includes a primary chamber and a secondary chamber storing fluid to be treated and treated fluid respectively. A **tube** defining an open flow path connects the primary and secondary chamber. A holder separates the secondary chamber from primary during processing.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for biological fluid treatment method which involves collecting biological fluid in a collection container. **Tube** extending from collection container, defines an open flow path and has sealed end. The **tube** is connected with that of primary chamber of processing set. Biological fluid containing photochemical agent is passed to primary chamber from collection container. A source applies **light energy** to biological fluid for activating photochemical agent. The biological fluid is treated using the **light energy**. The progress of treatment is identified by the **color** change of photochemical agent and is indicated by the secondary chamber. After the completion of treatment,

biological fluid is passed from primary to secondary chamber. The primary chamber is separated from processing set. The biological fluid is held by absorbent material in primary chamber. The holding period of fluid is 30 seconds to 7 days. Air is introduced into chambers then biological fluid is passed to primary and secondary chambers.

USE - Used for treating biological fluids such as **blood** , **blood** components.

ADVANTAGE - Biological fluid is treated efficiently by the disposable processing set. As the indicator is provided, completion of the treatment process is **detected** easily and so reliability of operation is improved. As **light energy** is used for treatment, operating efficiency is improved and serviceability is improved. By passing **light energy** to biological fluid containing photochemical agent, pathogen inactivated biological fluid is attained.

DESCRIPTION OF DRAWING(S) - The figure shows the perspective view of biological fluid treatment apparatus.

**Light** box (10)  
Housing (12)  
Top panel (14)  
Bottom panel (16)  
Front and rear panels (17)  
Side panels (18)  
Door (24)  
Control module (26)  
Fluid treatment module (28)  
Control panel (32)  
pp; 75 DwgNo 1/22

Title Terms: DISPOSABLE; FLUID; PROCESS; SET; TREAT; **BLOOD** ; **BLOOD** ;  
COMPONENT; **TUBE** ; CONNECT; PRIMARY; SECONDARY; CHAMBER; SEPARATE; HOLD;  
PROCESS  
Derwent Class: B04; D22; J01; P34; S05  
International Patent Class (Main): **A61M-001/36** ; B01D-000/00; B01D-015/00  
File Segment: CPI; EPI; EngPI

17/5/28 (Item 28 from file: 350)

DIALOG(R)File 350:Derwent WPIX  
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013084940 \*\*Image available\*\*  
WPI Acc No: 2000-256812/200022  
XRAM Acc No: C00-078388  
XRPX Acc No: N00-190957

**Combined blood glucose meter and insulin pump for diabetics includes an optics system receiving colorimetric data from a test strip, a meter display and manual or microprocessor controlled insulin delivery**

Patent Assignee: AMIRA MEDICAL (AMIR-N)  
Inventor: DOUGLAS J S; ROE J N; YUM S I  
Number of Countries: 088 Number of Patents: 002  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200013580	A1	20000316	WO 99US20978	A	19990910	200022 B
AU 9961427	A	20000327	AU 9961427	A	19990910	200032

Abstract (Basic): WO 200013580 A1

**NOVELTY** - An insulin pump (5), **catheter** connection (10) and **catheter** (15) are incorporated in a case fitted with a **blood** glucose monitor (25), strip holder (30) and meter display (35). A lancing system (50) and test strip (55) collects and tests the **blood** sample. An optics system receives **colorimetric** data from the test. The insulin dose rate can be set manually by the dispensing button (45). A microprocessor can be incorporated to control the **blood** glucose **detection** and pump delivery.

**USE** - For determination of glucose level in **blood** by diabetics and delivery of insulin based on the test result.

**ADVANTAGE** - Provides an integrated sampling, monitoring and insulin delivery system which combines ease of use with portability to facilitate patient compliance with recommended testing routines, leading to improved overall health. Test strips are held in a storage compartment for protection from damage due to physical stress, moisture or **light**. Electronic calculation of insulin delivery frees the patient from treatment determinations.

**DESCRIPTION OF DRAWING(S)** - The drawing shows an isometric view of the combined meter and insulin pump.

Pump (5)

**Catheter** connection (10)

**Catheter** (15)

**Blood** glucose monitor (25)

Strip holder (30)

Meter display (35)

Dispensing button (45)

Lancing system (50)

Test strip. (55)

pp; 19 DwgNo 2/3

Title Terms: COMBINATION; **BLOOD**; GLUCOSE; METER; INSULIN; PUMP; DIABETES; OPTICAL; SYSTEM; RECEIVE; **COLORIMETRIC**; DATA; TEST; STRIP; METER; DISPLAY; MANUAL; MICROPROCESSOR; CONTROL; INSULIN; DELIVER

Derwent Class: B07; P31; P34; S03

International Patent Class (Main): **A61B-005/00**

International Patent Class (Additional): **A61M-005/172**; G01N-033/487

File Segment: CPI; EPI; EngPI

17/5/33 (Item 33 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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009488583 \*\*Image available\*\*

WPI Acc No: 1993-182118/199322

XRAM Acc No: C93-080604

XRPX Acc No: N93-140068

**Trans-cutaneous bilirubin detector partic. for infants - comprises light -directing prism which is applied under constant pressure of plunger and spring**

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Inventor: KRONBERG J W

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US N7663518	N	19930501	US 91663518	A	19910304	199322 B
US 5259382	A	19931109	US 91663518	A	19910304	199346



Priority Applications (No Type Date): US 91663518 A 19910304

Patent Details:

Patent No.	Kind	Lan	Pg	Main IPC	Filing Notes
US N7663518	N			G01N-000/00	
US 5259382	A		7	A61B-005/00	

Abstract (Basic): US N7663518 N

**Detector** comprises a hand-held body holding a prism (44) receiving **light** from the end of a fibre optic bundle (14) connected to a **light** source to direct it onto the skin and to direct reflected **light** back into the bundle. The bundle proximal end is trifurcate with one end connected to the source and two to electronic circuitry measuring the absorption of **light** wavebands absorbable and not absorbable by bilirubin.

Pref., two measurements are made, on the kneecap and forehead and these are compared. The body pref. carries a plunger (18) and spring (34) to apply pressure and reduce the effect of **light** absorption by **blood** haemoglobin. The force is pref. applied via an outer **tube** (36), this exposing a button (24) which is brightly **coloured** and has embossed blunt points for visual and tactile indication that the correct force has been applied.

USE/ADVANTAGE - Partic. for monitoring bilirubin levels in neonatal infants, provides accurate measurements with a non-invasive procedure.

Dwg.2/6

Title Terms: TRANS; CUTANEOUS; BILIRUBIN; **DETECT** ; INFANT; COMPRISE;

**LIGHT** ; DIRECT; PRISM; APPLY; CONSTANT; PRESSURE; PLUNGE; SPRING

Derwent Class: B04; S03

International Patent Class (Main): **A61B-005/00** ; G01N-000/00

File Segment: CPI; EPI

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WPI Acc No: 1987-137555/198720

XRPX Acc No: N87-103088

Single optical fibre transducer driving and measuring circuit - has bi-directional couplers recording signal intensities and transmitting pulsing energy to wavelength multiplexer-demultiplexer

Patent Assignee: BECTON DICKINSON CO (BECT ) ; DESERET MEDICAL INC (DESE-N)

Inventor: MERSCH S H

Number of Countries: 014 Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 222555	A	19870520	EP 86308436	A	19861029	198720 B
AU 8665077	A	19870514				198726
US 4936679	A	19900626	US 85797299	A	19851112	199028
CA 1282251	C	19910402				199118
EP 222555	B	19910828				199135
DE 3681117	G	19911002				199141
ES 2026132	T3	19920416	EP 86308436	A	19861029	199226

Abstract (Basic): EP 222555 A